

**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: Fred Parker Examiner #: 72396 Date: 2/4/05  
 Art Unit: 1762 Phone Number: 21426 Serial Number: 101776107  
 Mail Box and Bldg/Room Location: Room 8 D59 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: \_\_\_\_\_

*\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search claim 1 / invention summary on NPL. PG limit to best 20 or so references, which I expect will be easy.



(DID ALL WE COULD THINK TO DO, BUT NOT MUCH CLOSE OUT THERE.)

**STAFF USE ONLY**

	Type of Search	Vendors and cost where applicable
Searcher: _____	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: _____	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

8/16- U72  
molten metal / Roll out bath

1 CLAIMS

Applying polyurethane/polyurea mask to member prior to galvanizing / molten metal plating

We claim:

15  
6 5

1. The method of masking an area of a member to prevent the area from being galvanized during the galvanizing of the member, comprising the steps of:  
applying a polyurethane ~~adhesive~~ <sup>polyurea</sup> to the area prior to the galvanizing of the member.

2. The method of claim 1 wherein the member is a tubular member.

3. The method of claim 1 wherein the member is a tubular member and wherein the area to be masked is a threaded opening in the tubular member.

10

4. The method of claim 3 wherein the tubular member is a pole.

5. The method of claim 3 wherein the tubular member is an irrigation pipe.

6. The method of claim 2 wherein the tubular member is a pole.

15

7. The method of claim 1 wherein the polyurethane adhesive is comprised of hydrotreated light petroleum distillate, methylene bisphenyl diisocyanate, talc, silicon dioxide, and polyethylene polyphenyl isocyanate.

8. The method of claim 7 wherein the polyurethane adhesive also contains magnesium.

20

25

? show files

File 6:NTIS 1964-2005/Jan W4  
 (c) 2005 NTIS, Intl Cpyrght All Rights Res  
 File 8:EI Compendex(R) 1970-2005/Jan W3  
 (c) 2005 Elsevier Eng. Info. Inc.  
 File 25:Weldasearch-19662005/Dec  
 (c) 2005 TWI Ltd  
 File 31:World Surface Coatings Abs 1976-2004/Dec  
 (c) 2004 PRA Coat. Tech. Cen.  
 File 36:MetalBase 1965-20050105  
 (c) 2005 The Dialog Corporation  
 File 94:JICST-EPlus 1985-2005/Dec W3  
 (c)2005 Japan Science and Tech Corp(JST)  
 File 103:Energy SciTec 1974-2005/Jan B1  
 (c) 2005 Contains copyrighted material  
 File 144:Pascal 1973-2005/Jan W4  
 (c) 2005 INIST/CNRS  
 File 315:ChemEng & Biotec Abs 1970-2005/Jan  
 (c) 2005 DECHEMA  
 File 323:RAPRA Rubber & Plastics 1972-2005/Jan  
 (c) 2005 RAPRA Technology Ltd

? ds

Set	Items	Description
S1	23788	GALVANIZ? OR GALVANIS?
S2	657834	MASK? OR SCREEN? OR SHIELD OR SHIELDS OR SHIELDED OR SHIELDING? ?
S3	143993	POLYURETHAN?? OR URETHAN??
S4	11438	POLYUREA? ? OR (POLY OR POLYM? ? OR POLYMER? OR HOMOPOLYM? OR RESIN? OR GUM? ?) (2N)UREA? ?
S5	917	S1 AND S2
S6	1	S5 AND S3
S7	0	S5 AND S4

? f s6/9,de/all

6/9,DE/1 (Item 1 from file: 94)  
 DIALOG(R)File 94:JICST-EPlus  
 (c)2005 Japan Science and Tech Corp(JST). All rts. reserv.

03954189 JICST ACCESSION NUMBER: 99A0145270 FILE SEGMENT: JICST-E  
 The newest technology of paint Thermal insulation painting material,  
 "Cooltight"  
 TANAKA KAZUHIRO (1)  
 (1) Esukekaken

JETI, 1998, VOL.46,NO.13, PAGE.54-56, FIG.2, TBL.1

JOURNAL NUMBER: F0013BAY ISSN NO: 0289-4343

UNIVERSAL DECIMAL CLASSIFICATION: 667.633/.638

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Journal

ARTICLE TYPE: Commentary

~~MEDIA TYPE: Printed Publication~~

ABSTRACT: The titled paint is a kind of paint used exclusively for roof, which exhibits an excellent thermal insulation effect, when painted on the roof of building. It includes special \*\*\*polyurethane\*\*\* of turpentine/NAD type. Its heat reflection capability is high also in the case of deep color, and can cope with colored material of various colors within a broad range, which may be required by market. Its features are: excellent thermal insulation property, contamination preventing property, high durability, mold-proofness/algae-proofness, excellent painting workability, etc. Substrate where it is applicable are: thin-type roof tile (for painting), \*\*\*galvanized\*\*\* steel roof, slate roof, etc. The result of thermal insulation performance test for various base materials is shown.

DESCRIPTORS: heat insulating material; roof(building); \*\*\*polyurethane\*\*\* coatings; heat reflectivity; color; painting; heat reflection; roof material; thermal insulation

BROADER DESCRIPTORS: material; synthetic resin coatings; coating material(paint); heat transmission coefficient; coefficient; reflectivity; ratio; surface treatment; treatment; electromagnetic wave reflection; reflection; \*\*\*shielding\*\*\*

CLASSIFICATION CODE(S): YJ03060I

=> file reg

FILE 'REGISTRY' ENTERED AT 17:15:56 ON 04 FEB 2005  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2005 American Chemical Society (ACS)

=> display history full 11-

FILE 'HCA' ENTERED AT 14:51:47 ON 04 FEB 2005  
L1 422889 SEA MASK? OR SCREEN? OR SHIELD?  
L2 24267 SEA GALVANIZ? OR GALVANIS?

FILE 'REGISTRY' ENTERED AT 14:52:12 ON 04 FEB 2005  
E POLYURETHANE/PCT  
L3 68243 SEA POLYURETHANE/PCT  
E POLYUREA/CN  
L4 2 SEA "POLYUREA 6"/CN OR "POLYUREA RUBBER"/CN OR "POLYUREA  
SYNTHETIC RUBBER"/CN

FILE 'HCA' ENTERED AT 14:59:48 ON 04 FEB 2005  
L5 177274 SEA L3 OR POLYURETHAN## OR URETHAN##  
L6 28738 SEA L4 OR POLYUREA# OR (POLY OR POLYM? OR HOMOPOLYM? OR  
RESIN?) (2A)UREA#  
L7 529 SEA L1 AND L2  
L8 39 SEA L7 AND L5  
L9 4 SEA L7 AND L6  
L10 4 SEA L8 AND L9  
L11 7006 SEA (PETROLEUM# OR PETROL#) (2A)DISTILLATE#  
L12 38182 SEA TALC#

FILE 'REGISTRY' ENTERED AT 15:05:17 ON 04 FEB 2005  
E MAGNESIUM/CN  
L13 1 SEA MAGNESIUM/CN  
E METHYLENE BISPHENYL DIISOCYANATE/CN  
E POLYETHYLENE POLYPHENYL ISOCYANATE/CN  
E SILICON DIOXIDE/CN  
L14 1 SEA "SILICON DIOXIDE"/CN

FILE 'HCA' ENTERED AT 15:11:40 ON 04 FEB 2005  
L15 80 SEA METHYLENE# (3A) (BISPHENYL# OR PHENYL#) (3A) (ISOCYANAT?  
OR DIISOCYANAT?)  
L16 43 SEA (POLYETHYLENE# OR ETHYLENE#) (3A) (POLYPHENYL# OR  
PHENYL#) (3A) (ISOCYANAT? OR DIISOCYANAT?)  
L17 675042 SEA L14 OR (SILICON OR SI).(W) (OXIDE# OR DIOXIDE#) OR  
SILICA# OR SIO2

L18 QUE L13 OR MAGNESIUM#  
 L19 0 SEA L8 AND L11  
 L20 1 SEA L8 AND L12  
 L21 0 SEA L8 AND L15  
 L22 0 SEA L8 AND L16  
 L23 25 SEA L8 AND L17  
 -----  
 L24 9 SEA L8 AND L18  
 L25 12 SEA L9 OR L10 OR L20 OR L24  
 L26 15 SEA L23 NOT L25  
 L27 12 SEA L8 NOT (L25 OR L26)  
 L28 93 SEA SHIELDEX#  
 L29 3 SEA L25 NOT L28  
 L30 1 SEA L26 NOT L28  
 L31 12 SEA L27 NOT L28  
 L32 23 SEA (L25 OR L26) NOT (L29 OR L30)  
 L33 4 SEA L29 OR L30

=> file hca

FILE 'HCA' ENTERED AT 17:16:18 ON 04 FEB 2005

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L33 ANSWER 1 OF 4 HCA COPYRIGHT 2005 ACS on STN  
 AN 141:8688 HCA  
 ED Entered STN: 24 Jun 2004  
 TI Electromagnetic wave-**shielding** corrosion-resistant  
 surface-treated steel strip and its manufacture  
 IN Matsuda, Takeshi; Matsuzaki, Akira; Okai, Kazuhisa; Yoshimi, Naoto;  
 Yamashita, Masaaki  
 PA JFE Steel Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 52 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C23C022-78  
 ICS C23C022-18; C23C022-20; C23C022-22; C23C022-83; C23C028-00  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 55, 56

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2004156081 A2 20040603 JP 2002-320985

200211  
05

PRAI JP 2002-320985 20021105

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004156081	ICM	C23C022-78
	ICS	C23C022-18; C23C022-20; C23C022-22; C23C022-83; C23C028-00
JP 2004156081	FTERM	4K026/AA02; 4K026/AA07; 4K026/AA09; 4K026/AA12; 4K026/AA22; 4K026/BA03; 4K026/BA08; 4K026/BA12; 4K026/BB08; 4K026/BB10; 4K026/CA16; 4K026/CA18; 4K026/CA23; 4K026/CA26; 4K026/CA29; 4K026/CA37; 4K026/CA39; 4K026/EA02; 4K026/EB02; 4K026/EB05; 4K026/EB08; 4K026/EB11; 4K044/AA02; 4K044/AB02; 4K044/BA10; 4K044/BA12; 4K044/BA14; 4K044/BA17; 4K044/BA21; 4K044/BB03; 4K044/BB04; 4K044/BC02; 4K044/BC14; 4K044/CA07; 4K044/CA16; 4K044/CA18; 4K044/CA53
AB	The strip has a Cr-free org. and/or inorg. film on <b>galvanized</b> or Al-coated steel substrate and satisfies (1) $y \leq 0.64 \cdot x + 0.12$ [ $x$ = center line av. roughness Ra ( $\mu\text{m}$ ) after film formation; $y$ ( $\mu\text{m}$ ) = av. film thickness ( $\mu\text{m}$ )] or (2) setting Ra based on predetd. film thickness or setting film thickness based on predetd. Ra. The strip is manufd. by setting Ra or film thickness as above. Thus, an electrogalvanized steel sheet was coated with a mixt. contg. epoxy resin, a silane coupling agent, and $\text{H}_3\text{PO}_4$ to give a film having Ra 1.24 $\mu\text{m}$ , thickness 0.38 $\mu\text{m}$ , surface resistivity $\leq 10^{-4}$ $\Omega$ , and high corrosion resistance.	
ST	<b>galvanized</b> steel org inorg topcoat electromagnetic <b>shield</b> ; aluminum precoated steel org inorg topcoat; electromagnetic <b>shield</b> ; corrosion resistance inorg org topcoat surface roughness steel; electrogalvanized steel epoxy resin coating corrosion resistance	
IT	Coating materials (anticorrosive; electromagnetic- <b>shielding</b> anticorrosive <b>galvanized</b> or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)	
IT	<b>Polyurethanes</b> , uses (cationic, topcoat contg.; electromagnetic- <b>shielding</b> anticorrosive <b>galvanized</b> or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)	
IT	Aminoplasts (crosslinker for epoxy resin topcoat; electromagnetic- <b>shielding</b> anticorrosive <b>galvanized</b> or Al-coated	

steel strip having topcoat with controlled surface roughness and its manuf.)

IT **Galvanized steel**  
(electrogalvanized; electromagnetic-shielding anticorrosive **galvanized** or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)

IT **Electromagnetic shields**  
Surface roughness  
(electromagnetic-shielding anticorrosive **galvanized** or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)

IT **Polyurethanes, uses**  
(epoxy-polyoxyalkylene-, topcoat; electromagnetic-shielding anticorrosive **galvanized** or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)

IT **Polyoxyalkylenes, uses**  
(epoxy-polyurethane-, topcoat; electromagnetic-shielding anticorrosive **galvanized** or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)

IT **Galvanized steel**  
(hot-dip; electromagnetic-shielding anticorrosive **galvanized** or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)

IT **Epoxy resins, uses**  
(polyoxyalkylene-polyurethane-, topcoat; electromagnetic-shielding anticorrosive **galvanized** or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)

IT **Coupling agents**  
(silane, topcoat contg.; electromagnetic-shielding anticorrosive **galvanized** or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)

IT **Corrosion inhibitors**  
(topcoat contg.; electromagnetic-shielding anticorrosive **galvanized** or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)

IT **Molybdates**  
**Phosphates, uses**  
**Thiols (organic), uses**  
(topcoat contg.; electromagnetic-shielding anticorrosive **galvanized** or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)

IT **Epoxy resins, uses**  
(topcoat, **urea resin**-crosslinked; electromagnetic-shielding anticorrosive **galvanized** or Al-coated steel strip having topcoat with



- controlled surface roughness and its manuf.)
- IT 7631-86-9, Silica, uses  
(colloidal, Ca ion-exchanged, topcoat contg.; electromagnetic-  
**shielding** anticorrosive **galvanized** or Al-coated  
steel strip having topcoat with controlled surface roughness and  
its manuf.)
- 
- IT 919-30-2, KBE 903 4420-74-0, 3-Mercaptopropyltrimethoxysilane  
(coupling agent, topcoat contg.; electromagnetic-  
**shielding** anticorrosive **galvanized** or Al-coated  
steel strip having topcoat with controlled surface roughness and  
its manuf.)
- IT 4098-71-9, IPDI 9011-05-6, Urea resin  
124671-40-5, Takenate B 870N  
(crosslinker for epoxy resin topcoat; electromagnetic-  
**shielding** anticorrosive **galvanized** or Al-coated  
steel strip having topcoat with controlled surface roughness and  
its manuf.)
- IT 326588-96-9, MF K60X  
(crosslinker for topcoat; electromagnetic-**shielding**  
anticorrosive **galvanized** or Al-coated steel strip  
having topcoat with controlled surface roughness and its manuf.)
- IT 12597-69-2, Steel, uses  
(electromagnetic-**shielding** anticorrosive  
**galvanized** or Al-coated steel strip having topcoat with  
controlled surface roughness and its manuf.)
- IT 61-82-5DP, 3-Amino-1,2,4-triazole, reaction products with epoxy  
resin and polyalkylene glycol-modified epoxy resin  
**9042-77-7DP**, reaction products with epoxy resins and  
aminotriazole 25068-38-6DP, Epikote 834X90, reaction products with  
**polyurethane**, epoxy resin, and aminotriazole  
(isocyanate-crosslinked, topcoat; electromagnetic-  
**shielding** anticorrosive **galvanized** or Al-coated  
steel strip having topcoat with controlled surface roughness and  
its manuf.)
- IT 7429-90-5, Aluminum, uses  
(steel precoated with, topcoat contg.; electromagnetic-  
**shielding** anticorrosive **galvanized** or Al-coated  
steel strip having topcoat with controlled surface roughness and  
its manuf.)
- IT 97-77-8, Tetraethylthiuram disulfide 137-26-8D, Thiuram, derivs.  
288-47-1D, Thiazole, derivs. 289-06-5D, Thiadiazole, derivs.  
1344-95-2, Calcium silicate **7439-95-4, Magnesium**  
, uses 7439-96-5, Manganese, uses 7440-70-2D, Calcium, compds.  
7664-38-2, Phosphoric acid, uses 7697-37-2, Nitric acid, uses  
7784-30-7, Aluminum phosphate 13746-89-9, Zirconium nitrate  
13939-25-8, Aluminum dihydrogen triphosphate 37306-44-8D,  
Triazole, derivs. 122493-85-0, Aluminum phosphomolybdate  
271580-38-2, ADEKA BON-TIGHTER HUX 670

(topcoat contg.; electromagnetic-**shielding** anticorrosive **galvanized** or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)

IT 67-51-6DP, 3,5-Dimethylpyrazole, reaction products with epoxy resin, bisphenol A, and dibutylamine 80-05-7DP, Bisphenol A, reaction products with epoxy resin, dimethylpyrazole, and dibutylamine  
 111-92-2DP, Dibutylamine, reaction products with epoxy resin, bisphenol A, and dimethylpyrazole 25068-38-6DP, EP 828, reaction products with bisphenol A, dimethylpyrazole, and dibutylamine  
 (topcoat; electromagnetic-**shielding** anticorrosive **galvanized** or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)

IT 591233-03-3D, methyl- and ethyl-substituted  
 (topcoat; electromagnetic-**shielding** anticorrosive **galvanized** or Al-coated steel strip having topcoat with controlled surface roughness and its manuf.)

L33 ANSWER 2 OF 4 HCA COPYRIGHT 2005 ACS on STN  
 AN 140:68942 HCA  
 ED Entered STN: 22 Jan 2004  
 TI Process of making vias for multilayer electric circuit assemblies  
 IN Wang, Alan E.; Olson, Kevin C.  
 PA USA  
 SO U.S. Pat. Appl. Publ., 11 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM H05K001-03  
 ICS H05K001-09; B32B003-10; H05K001-11; H01R012-04; B21B001-00;  
 B21C027-00; B21D028-00; G03F007-20; G03F007-30; G03F007-40  
 NCL 174256000; 430312000; 430314000; 430316000; 430317000; 430318000;  
 430330000; 174262000; 428137000; 428596000  
 CC 76-2 (Electric Phenomena)  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	US 2004000427	A1	20040101	US 2002-184387	200206 27
	US 6844504	B2	20050118	US 2002-227768	200208 26
	WO 2004004432	A1	20040108	WO 2003-US20361	200306 27

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,  
 CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,

GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,  
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
 NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,  
 SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA,  
 ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,  
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
 NE, SN, TD, TG

WO 2004004433

A1

20040108

WO 2003-US20362

200306

27

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,  
 CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,  
 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,  
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
 NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,  
 SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA,  
 ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,  
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
 NE, SN, TD, TG

PRAI US 2002-184387 A2 20020627

US 2002-227768 A 20020826

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004000427	ICM	H05K001-03
	ICS	H05K001-09; B32B003-10; H05K001-11; H01R012-04; B21B001-00; B21C027-00; B21D028-00; G03F007-20; G03F007-30; G03F007-40
	NCL	174256000; 430312000; 430314000; 430316000; 430317000; 430318000; 430330000; 174262000; 428137000; 428596000

AB Provided is a process for making vias for multilayer elec. circuit assembly including the steps of: (a) applying a curable coating compn. to a substrate, some or all of which is elec. conductive, to form an uncured coating thereon; (b) applying a resist over the uncured coating; (c) imaging the resist in predetd. locations; (d) developing the resist to expose predetd. areas of the uncured coating; (e) removing the exposed areas of the uncured coating; and (f) heating the coated substrate of step (e) to a temp. and for a time sufficient to cure the coating. Also disclosed is a process of fabricating a circuit assembly.

ST multilayer elec circuit assembly via making

- IT Electric insulators  
(coatings; process of making vias for multilayer elec. circuit assemblies)
- IT Coating process  
(curtain; process of making vias for multilayer elec. circuit assemblies)

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- IT Coating process  
(immersion; process of making vias for multilayer elec. circuit assemblies)
- IT Electric circuits  
(multilayer; process of making vias for multilayer elec. circuit assemblies)
- IT Vinyl compounds, processes  
(polymers; process of making vias for multilayer elec. circuit assemblies)
- IT Coating materials  
Crosslinking agents  
Electric conductors  
Electrodeposition  
Etching  
Interconnections, electric  
Photoresists  
Printed circuit boards  
**Screen printing**  
(process of making vias for multilayer elec. circuit assemblies)
- IT **Galvanized steel**  
Metals, uses  
(process of making vias for multilayer elec. circuit assemblies)
- IT Acrylic polymers, processes  
Epoxy resins, processes  
Polyamides, processes  
Polyesters, processes  
Polyethers, processes  
Polyimides, processes  
Polysiloxanes, processes  
**Polyureas**  
**Polyurethanes, processes**  
(process of making vias for multilayer elec. circuit assemblies)
- IT Plastics, properties  
Polymers, properties  
(process of making vias for multilayer elec. circuit assemblies)
- IT Aminoplasts  
Carbodiimides  
(process of making vias for multilayer elec. circuit assemblies)
- IT Coating process  
(roller; process of making vias for multilayer elec. circuit assemblies)
- IT Coating process

(spin; process of making vias for multilayer elec. circuit assemblies)

IT Coating process  
(spray; process of making vias for multilayer elec. circuit assemblies)

IT Aluminum alloy, base

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Copper alloy, base  
Gold alloy, base  
Magnesium alloy, base  
Nickel alloy, base  
(process of making vias for multilayer elec. circuit assemblies)

IT 7429-90-5, Aluminum, uses 7439-95-4, Magnesium, uses 7440-02-0, Nickel, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 11135-48-1, Nickel alloy, Ni, Fe 11148-11-1, Iron alloy, Fe, Ni 12597-69-2, Steel, uses 39323-81-4, INVAR  
(process of making vias for multilayer elec. circuit assemblies)

IT 75-13-8D, Isocyanic acid, esters, polymers  
(process of making vias for multilayer elec. circuit assemblies)

L33 ANSWER 3 OF 4 HCA COPYRIGHT 2005 ACS on STN

AN 138:173881 HCA

ED Entered STN: 13 Mar 2003

TI Electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products

IN Heimann, Robert L.; Popov, Branko; Slavkov, Dragan; Haran, Bala

PA Elisha Holding, LLC, USA

SO U.S. Pat. Appl. Publ., 9 pp.  
CODEN: USXXCO

DT Patent

LA English

IC ICM C23C022-60

NCL 148245000

CC 55-6 (Ferrous Metals and Alloys)  
Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 2003034095	A1	20030220	US 2002-211029	20020802
	US 6753039	B2	20040622		
	WO 2003035942	A2	20030501	WO 2002-US24617	20020802
	WO 2003035942	A3	20040129		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ,				

DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP,  
 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK,  
 MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL,  
 TJ, TM, TT, UA, UG, UZ, VN, YU, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,  
 TG

EP 1412559

A2

20040428

EP 2002-798406

200208  
02

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,  
 PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK

US 2004217334

A1

20041104

US 2004-816988

200404  
01

PRAI US 2001-310006P P 20010803  
 US 2002-211029 A1 20020802  
 WO 2002-US24617 W 20020802

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2003034095	ICM	C23C022-60
	NCL	148245000
US 2003034095	ECLA	C23C022/60; C23C022/62
US 2004217334	ECLA	C23C022/60; C23C022/62

AB The method for treating a substrate having an elec. conductive surface comprises drying the substrate at .gtoreq.120.degree., rinsing the substrate, and again drying the substrate. The process employs a medium comprising at least one oxygen contg. water sol. compd. (e.g., stannates, molybdates, vanadates and hydrated cerium compds.) having a controlled and predetd. concn., temp. and basic pH, wherein said medium is substantially free of chromates, and the metallic surface is at least partially corroded or solubilized. Said water sol. compds. comprise .gtoreq.1 of sodium stannate hydrate, sodium molybdate hydrate, ammonium metavanadate, and cerium nitrate hydrate. The surface comprises at least one member selected from copper, nickel, tin, iron, zinc, aluminum, **magnesium**, stainless steel and steel and alloys thereof. The method further comprises applying an adherent compn. comprising .gtoreq.1 of latex, silanes, epoxides, silicone, amines, alkyds, **urethanes** and acrylics. For example, the mineralization process was done on bare steel, tin-plated steel, hot dip **galvanized** steel, and electro-**galvanized** steel using the following solns.: deposition in NaOH soln. + 1 g/L sodium stannate trihydrate, or sodium molybdate dihydrate, or ammonium metavanadate. Subsequent to electroless deposition, the panels were removed from the bath and

washed with deionized water immediately. The inventive process can produce microelectronic films, e.g., on metal or conductive surfaces to impart enhanced elec./magnetic (e.g., EMI **shielding**, reduced elec. connector fretting, reduce corrosion caused by dissimilar metal contact, among others), and corrosion resistance, or to resist UV light and monoat. oxygen contg. environments such as outer space.

- ST steel corrosion resistance surface mineralization electrolytic electroless; stannate molybdate vanadate metal surface mineralization corrosion prevention
- IT Microelectronics  
(films; electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products)
- IT Corrosion prevention  
(of metal surface; electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products)
- IT Latex  
(protecting film on metal surfaces; electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products)
- IT Alkyd resins  
Amines, uses  
Epoxy resins, uses  
Polysiloxanes, uses  
Silanes  
**Urethanes**  
(protecting film on metal surfaces; electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products)
- IT Corrosion  
(resistance, of metal surface; electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products)
- IT **Galvanized** steel  
(surface mineralization; electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products)
- IT 7631-95-0, Sodium molybdate 7803-55-6, Ammonium metavanadate  
12058-66-1, Sodium stannate 17309-53-4, Cerium nitrate  
(mineralizing agent; electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products)
- IT 1310-73-2, Sodium hydroxide (NaOH), processes  
(mineralizing soln. of; electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products)
- IT 79-10-7D, Acrylic acid, derivs.

(protecting film on metal surfaces; electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products)

IT 7429-90-5, Aluminum, processes 7439-89-6, Iron, processes  
7439-95-4, Magnesium, processes 7440-02-0,  
Nickel, processes 7440-31-5, Tin, processes 7440-50-8, Copper,  
processes 7440-66-6, Zinc, processes

(substrate; electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products)

IT 12597-68-1, Stainless steel, processes  
(surface mineralization, substrate; electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products)

IT 12597-69-2, Steel, processes  
(tin-plated steel, surface mineralization; electrolytic and electroless process for treating steel surfaces to fabricate corrosion-resistant products)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

- (1) Anon; GB 342256 1931 HCA
- (2) Anon; GB 1113148 1968
- (3) Anon; JP 53-31538 A 1978 HCA
- (4) Anon; WO 0036176 2000 HCA
- (5) Bishop; US 5407749 A 1995 HCA
- (6) Chigane, M; Preparation of Silica Thin Films by Electrolysis of Aqueous Solution 2002, PD9 HCA
- (7) Cole; US 5068134 A 1991 HCA
- (8) Cook; US 20020119895 A1 2002
- (9) Fontana; US 6183649 B1 2001 HCA
- (10) Gruenbauer; US 6527825 B1 2003 HCA
- (11) Hanagata; US 5057335 A 1991 HCA
- (12) Heimann; US 20030118861 A1 2003
- (13) Houlihan; US 3929514 A 1975 HCA
- (14) Mansfeld; US 5582654 A 1996 HCA
- (15) Maurer; US 3444007 A 1969
- (16) Miller; US 5399210 A 1995 HCA
- (17) Miller; US 5419790 A 1995 HCA
- (18) Mitchell; US 3899367 A 1975 HCA
- (19) Sabata; US 5326594 A 1994
- (20) Tobiyama; US 5487919 A 1996 HCA
- (21) Weaver; US 3677827 A 1972 HCA

L33 ANSWER 4 OF 4 HCA COPYRIGHT 2005 ACS on STN

AN 120:305886 HCA

ED Entered STN: 11 Jun 1994

TI Manufacture of porous ceramic filters and flower replicas

IN Hayes, Kevin G.; Roberts, Peter A.

PA Polyceramics, Inc., USA



SO U.S., 21 pp. Cont.-in-part of U.S. Ser. No. 881,056.  
CODEN: USXXAM

DT Patent

LA English

IC ICM C04B038-06

NCL 264025000

CC 57-2 (Ceramics)

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5298205	A	19940329	US 1992-936762	19920827
	US 5296180	A	19940322	US 1992-881056	19920511
	US 5458837	A	19951017	US 1993-156359	19931123
	US 5705118	A	19980106	US 1994-216480	19940322
PRAI	US 1992-881056	A2	19920511		
	US 1992-936762	A2	19920827		
	US 1993-156359	A2	19931123		

#### CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5298205	ICM	C04B038-06
	NCL	264025000
US 5458837	ECLA	A01G031/00B; B28B001/00; B28B001/32; B28B001/50; B28B007/00F; B28B007/34; B28B007/34B; B28B011/24C; B44C506/; C04B038/06F2D10; F23D003/08; H01M004/66D; A61F002/28; B22C009/04
US 5705118	ECLA	A61F002/28; B28B001/32; B28B001/50; B28B007/00F; B28B007/34; C04B035/634; F23D003/08

AB The process comprises the use of an org. sponge material that will be for .gtoreq.95% converted into gas by heat treatment at 800.degree. for .gtoreq.60 min, and a ceramic slurry. The ceramic slurry contains liq. 45-75, gluten 1-40, and ceramic material .gtoreq.60 wt.%. In the 1st step of the process, the sponge is substantially satd. with the slurry. The satd. sponge is dehydrated until the liq. content is .ltorsim.5.0 wt.%. The dehydrated sponge is then fired at 1100-3500 .degree.F to give the porous ceramic material.

ST slip sponge porous ceramic filter; flower slip coating firing ceramic; daffodil slip coating firing ceramic; carnation slip

- coating firing ceramic; daisy slip coating firing ceramic; burdock  
bush slip coating ceramic; rose slip coating firing ceramic;  
**screen** slip coating firing ceramic; tile porous ceramic
- IT Burdock  
Carnation  
Daisy  
Flower  
Narcissus  
Rose  
    (coating of, with slips, for ceramic replicas manuf. by heat  
    treatment and firing)
- IT Glutens  
    (corn and wheat, slips contg., impregnation with, of org. sponge  
    material, for porous ceramics manuf. by heat treatment and  
    firing)
- IT Microwave  
    (drying with, of slip impregnated cellular ceramics, for porous  
    ceramics manuf. by heat treatment and firing)
- IT **Screens**  
    (**galvanized**, coating of, with ceramic slip, for firing  
    and electroplating)
- IT Slips (suspensions)  
    (gluten-contg., impregnation with, of org. sponge material, for  
    porous ceramics manuf. by heat treatment and firing)
- IT **Urethane** polymers, uses  
    (impregnation of cellular, with gluten-contg. slips, for porous  
    ceramics manuf. by heat treatment and firing)
- IT Plastics, cellular  
    (impregnation of, with gluten-contg. slips, for porous ceramics  
    manuf. by heat treatment and firing)
- IT Metals, uses  
    (**screens**, coating of, with ceramic slip, for firing and  
    electroplating)
- IT Feldspar-group minerals  
Kaolin, uses  
    (slips contg. gluten and, coating with, of flowers, for ceramic  
    replicas manuf. by heat treatment and firing)
- IT Filters and Filtering materials  
Tiles  
    (ceramic, manuf. of porous, by firing gluten-contg.  
    slip-impregnated org. sponge material)
- IT Ceramic materials and wares  
    (filters, manuf. of porous, by firing gluten-contg.  
    slip-impregnated org. sponge material)
- IT 9003-20-7P, Poly(vinyl acetate)  
    (impregnation of cellular, with gluten-contg. slips, for porous  
    ceramics manuf. by heat treatment and firing)
- IT 1310-73-2P, Sodium hydroxide, uses **7631-86-9P**,

**Silica, uses**

(slips contg. gluten and, coating with, of flowers, for ceramic replicas manuf. by heat treatment and firing)

=> d 127 1-12 ti

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- L27 ANSWER 1 OF 12 HCA COPYRIGHT 2005 ACS on STN  
TI Metallic plate material coated with resin for electric/electronic instrument and electric/electronic instrument using same
- L27 ANSWER 2 OF 12 HCA COPYRIGHT 2005 ACS on STN  
TI Comparison of analytical methods for study of the adhesion and aging mechanisms of plastics on metal-coated surfaces
- L27 ANSWER 3 OF 12 HCA COPYRIGHT 2005 ACS on STN  
TI Salt spray test vs. field results for coated samples: II. Comparison of 5 years' exposure in pulp mills, to the salt spray test and the Volvo-cycle test, for painted carbon steel, **galvanized** steel and aluminum substrates
- L27 ANSWER 4 OF 12 HCA COPYRIGHT 2005 ACS on STN  
TI Corrosion-resistant polymer-coated suspension bridge cable structures with corrosion resistance for a long period and manufacture thereof in reduced steps
- L27 ANSWER 5 OF 12 HCA COPYRIGHT 2005 ACS on STN  
TI Cloth-appearance decorative boards
- L27 ANSWER 6 OF 12 HCA COPYRIGHT 2005 ACS on STN  
TI Manufacture of fiber-reinforced thermosetting resin composition panels
- L27 ANSWER 7 OF 12 HCA COPYRIGHT 2005 ACS on STN  
TI Undercoating materials for precoated steel
- L27 ANSWER 8 OF 12 HCA COPYRIGHT 2005 ACS on STN  
TI Moldings for **shields** for electromagnetic waves
- L27 ANSWER 9 OF 12 HCA COPYRIGHT 2005 ACS on STN  
TI Electrically conductive sheet laminates
- L27 ANSWER 10 OF 12 HCA COPYRIGHT 2005 ACS on STN  
TI Decorative metal sheets
- L27 ANSWER 11 OF 12 HCA COPYRIGHT 2005 ACS on STN  
TI **Masking** tape or sheet for steel hot-dip **galvanizing**

L27 ANSWER 12 OF 12 HCA COPYRIGHT 2005 ACS on STN  
 TI Coatings with engravinglike colored patterns

=> d 127 1,11 all

L27 ANSWER 1 OF 12 HCA COPYRIGHT 2005 ACS on STN  
 AN 137:71645 HCA  
 ED Entered STN: 25 Jul 2002  
 TI Metallic plate material coated with resin for electric/electronic  
 instrument and electric/electronic instrument using same  
 IN Kato, Osamu  
 PA The Furukawa Electric Co., Ltd., Japan  
 SO Eur. Pat. Appl., 18 pp.  
 CODEN: EPXXDW  
 DT Patent:  
 LA English  
 IC ICM B05D007-14  
 CC 76-14 (Electric Phenomena)  
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	EP 1219359	A2	20020703	EP 2001-130272	200112 20
	EP 1219359	A3	20030507		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2002275656	A2	20020925	JP 2001-376363	200112 10
	TW 561076	B	20031111	TW 2001-90131530	200112 19
	US 2002127424	A1	20020912	US 2001-29607	200112 20
	US 6797407	B2	20040928		
	CN 1383357	A	20021204	CN 2001-143771	200112 21
PRAI	JP 2000-389514	A	20001221		
	JP 2001-376363	A	20011210		

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

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EP 1219359 ICM B05D007-14

EP 1219359 ECLA B05D007/16; C09D163/00+B; H05K009/00B1B

US 2002127424 ECLA B05D007/16; C09D163/00+B; H05K009/00B1B

AB A metallic plate material used as a material for, for example, a casing for contg. parts of an elec./electronic instrument, which is good in grounding properties, **shield** properties against electromagnetic waves, formabilities, lubricity, sliding properties, and resistance to solvents. The metallic plate material comprises a resin-coated metallic plate material. The resin coating contains, as resin, at least one substance chosen from a group consisting of acrylic-based resin, epoxy-based resin, and **urethane**-based resin, and contains H2O in the amt. of 1 to 50% and a lubricant in the amt. of 0.1 to 20%, and has a thickness of 0.05 to 5 .mu.m.

ST metal plate electronic package resin coating

IT Surfactants  
(anionic; resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT Surfactants  
(cationic; resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT **Polyurethanes**, uses  
(polyether-; resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT Coating materials  
Electromagnetic **shields**  
Electronic packaging materials  
Lubricants  
Plates  
Surfactants  
(resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT Acrylic polymers, uses  
Epoxy resins, uses  
**Polyurethanes**, uses  
(resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT Paraffin waxes, uses  
Polyesters, uses  
(resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT **Galvanized** steel  
(resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT Carnauba wax

Fluoropolymers, uses

Lanolin

(wax; resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT Aluminum alloy, base

(resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT 7440-22-4, Silver, uses

(resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT 7732-18-5, Water, uses

(resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT 79-06-1, Acrylamide, uses 79-06-1D, Acrylamide, derivs.

9003-05-8, Polyacrylamide 9003-32-1, Poly(ethyl acrylate)

9011-14-7, PMMA 25609-74-9 25722-14-9, Poly(N-methylacrylamide)

26655-94-7, Poly(isopropyl methacrylate) 26949-19-9 27100-33-0,

Poly(bisphenol A) 349545-30-8

(resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT 7440-50-8, Copper, uses 12597-68-1, Stainless steel, uses

(resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

IT 9002-84-0, Polytetrafluoroethylene 9002-88-4, Polyethylene

(wax; resin-coated metallic plate material for elec./electronic instrument and elec./electronic instrument using same)

L27 ANSWER 11 OF 12 HCA COPYRIGHT 2005 ACS on STN

AN 100:213937 HCA

ED Entered STN: 23 Jun 1984

TI **Masking** tape or sheet for steel hot-dip  
**galvanizing**

PA Shinko Kagaku Kogyo K. K., Fukui, Japan; Nitto Electric Industrial Co., Ltd.

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC C23C001-02

ICA B05C017-06; B32B017-10

CC 55-6 (Ferrous Metals and Alloys)

Section cross-reference(s): 38, 40

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 59001664	A2	19840107	JP 1982-32918	198203

01

JP 61000900 B4 19860111  
 PRAI JP 1982-32918 19820301

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 59001664	IC	C23C001-02
	ICA	B05C017-06; B32B017-10
AB	<p>The <b>masking</b> tape or sheet consists of (1) sheet substrates which do not melt in molten Zn (2) chem.-resistant surface film on 1 surface of the substrate (3) pressure-sensitive adhesive on the other surface. The tape or sheet is easily applied in a short time on steel products for <b>galvanizing</b> and are easily removed afterwards. Thus, a cotton cloth 12 B, 0.11 mm thick was immersed in an aq. soln. of acrylic pressure-sensitive adhesive (30 wt. % based on solid, Boncoat PS-300) and dried at 110.degree.. A low-d. poly(ethylene) [9002-88-4] film 0.05 mm thick was overlaid and stuck on 1 surface of the cotton cloth to form a <b>masking</b> tape. The tape was wound on a steel sheet substrate which was then hot-dip <b>galvanized</b>. The poly(ethylene) film was melted and decompd. in the bath to form carbonaceous material which was easily removed.</p>	
ST	<p><b>masking</b> tape <b>galvanizing</b> steel; cotton  <b>masking</b> tape <b>galvanizing</b>; acrylic adhesive  <b>masking</b> tape <b>galvanizing</b>; polyethylene  <b>masking</b> tape <b>galvanizing</b></p>	
IT	<p>Rubber, synthetic          Urethane polymers, uses and miscellaneous          (adhesive, on <b>masking</b> tape and sheet for selective <b>galvanizing</b> of steel)</p>	
IT	<p>Acrylic polymers, uses and miscellaneous          (adhesives, for <b>masking</b> tape and sheet for selective <b>galvanizing</b> of steel)</p>	
IT	<p>Glass fibers, uses and miscellaneous          (cloth, <b>masking</b> tape and sheet, for selecting <b>galvanizing</b> of steel)</p>	
IT	<p>Adhesive tapes          (for <b>masking</b> of steel sheets for selective <b>galvanizing</b>)</p>	
IT	<p><b>Galvanization</b>          (of steel, <b>masking</b> tape and sheet for selective)</p>	
IT	<p>Textiles          (cotton, for <b>masking</b> tape and sheet, for selective <b>galvanizing</b> of steel)</p>	
IT	<p>9002-88-4 25038-71-5          (<b>masking</b> tape and sheet, for selective <b>galvanizing</b> of steel)</p>	

=> d 132 1-23 ti

L32 ANSWER 1 OF 23 HCA COPYRIGHT 2005 ACS on STN

TI Hexavalent chromium-free high-gloss precoated metal sheets with improved corrosion resistance in worked parts

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L32 ANSWER 2 OF 23 HCA COPYRIGHT 2005 ACS on STN

TI Environment harmonious precoat steel plates with good peeling resistance of coating films and corrosion resistance of processing parts

L32 ANSWER 3 OF 23 HCA COPYRIGHT 2005 ACS on STN

TI Environmentally friendly precoated steel sheet having high peeling resistance in sliding part and corrosion resistance in processing part

L32 ANSWER 4 OF 23 HCA COPYRIGHT 2005 ACS on STN

TI Precoat metal plate excellent in press workability and method for production thereof

L32 ANSWER 5 OF 23 HCA COPYRIGHT 2005 ACS on STN

TI Environmentally friendly corrosion- and boiling water-resistant precoated steel sheets

L32 ANSWER 6 OF 23 HCA COPYRIGHT 2005 ACS on STN

TI Precoated metal sheet with excellent press formability and producing process thereof

L32 ANSWER 7 OF 23 HCA COPYRIGHT 2005 ACS on STN

TI Chromium-free anticorrosive coatings for metals

L32 ANSWER 8 OF 23 HCA COPYRIGHT 2005 ACS on STN

TI Hexavalent chromium-free corrosion-resistant precoated steel sheet

L32 ANSWER 9 OF 23 HCA COPYRIGHT 2005 ACS on STN

TI Steel sheets coated with solvent-resistant organic resin composites

L32 ANSWER 10 OF 23 HCA COPYRIGHT 2005 ACS on STN

TI Polymer-coated steel sheet with high corrosion resistance and its manufacture

L32 ANSWER 11 OF 23 HCA COPYRIGHT 2005 ACS on STN

TI Steel sheets coated with corrosion-resistant organic material

L32 ANSWER 12 OF 23 HCA COPYRIGHT 2005 ACS on STN

TI Organic polymer-coated steel sheet with good corrosion resistance



- L32 ANSWER 13 OF 23 HCA COPYRIGHT 2005 ACS on STN  
TI Steel sheets coated with chromium-free corrosion-resistant organic material
- L32 ANSWER 14 OF 23 HCA COPYRIGHT 2005 ACS on STN  
TI Surface treated steel sheet having excellent corrosion resistance  
and method for producing the same
- L32 ANSWER 15 OF 23 HCA COPYRIGHT 2005 ACS on STN  
TI Primer compositions, film formation and corrosion- and scratch-resistant pre-coated metals therefrom
- L32 ANSWER 16 OF 23 HCA COPYRIGHT 2005 ACS on STN  
TI Corrosion-resistant steel sheets having films of chelating polymers and organic topcoats
- L32 ANSWER 17 OF 23 HCA COPYRIGHT 2005 ACS on STN  
TI Anticorrosive weldable preprimed steel plates with excellent powdering resistance and coatability
- L32 ANSWER 18 OF 23 HCA COPYRIGHT 2005 ACS on STN  
TI Corrosion-resistant steel coated with organic composites and useful for automobile bodies
- L32 ANSWER 19 OF 23 HCA COPYRIGHT 2005 ACS on STN  
TI Organic composite-coated steel sheets having high corrosion resistance, press formability, and sharpness
- L32 ANSWER 20 OF 23 HCA COPYRIGHT 2005 ACS on STN  
TI Rustproof bright organic-coated steel plates
- L32 ANSWER 21 OF 23 HCA COPYRIGHT 2005 ACS on STN  
TI Anticorrosive and glossy organic composite-coated steel panels and their manufacture
- L32 ANSWER 22 OF 23 HCA COPYRIGHT 2005 ACS on STN  
TI Anticorrosive and glossy organic composite coated steel panels and their manufacture
- L32 ANSWER 23 OF 23 HCA COPYRIGHT 2005 ACS on STN  
TI Steel sheets coated with composite organic films and excellent in outside rustproofness and brightness, and production thereof

=> d 132 4,6,9,17 all

L32 ANSWER 4 OF 23 HCA COPYRIGHT 2005 ACS on STN  
140:95681 HCA

ED Entered STN: 05 Feb 2004  
 TI Precoat metal plate excellent in press workability and method for  
 production thereof  
 IN Ueda, Kouhei; Kanai, Hiroshi; Kimata, Yoshio  
 PA Nippon Steel Corporation, Japan  
 SO PCT Int. Appl., 32 pp.

CODEN: PIXXD2

DT Patent  
 LA Japanese  
 IC ICM C23C028-00  
 ICS C23C022-48  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 55

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004005579	A1	20040115	WO 2003-JP8429	20030702

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI JP 2002-193282 A 20020702

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004005579	ICM	C23C028-00
	ICS	C23C022-48

AB Title plate comprises (A) a chem. treatment coating layer comprising as solid components .gtoreq.1 silane coupling agent or its hydrolyzed condensate, water-dispersible silica, .gtoreq.1 zirconium compd. or a titanium compd., and a water-sol. resin formed on one or both surfaces of a metal plate and (B) a coating layer comprising a resin component and 1-140 parts (based on 100 parts solid resin) aluminum phosphate-based pigment formed thereon. Thus, a chem. treatment coating compn. comprising .gamma.-glycidoxypropyltrimethoxysilane 5, Snowtex N 1.0, zirconyl ammonium carbonate 0.5 (based on zirconium), and polyacrylic acid 25 g/L was

applied on the both surfaces of a degreased zinc-plated steel plate, dried, a coating compn. comprising a polyester clear coating material 100, K-G 105 aluminum phosphate-based pigment 20, **Shieldex** C 303 anticorrosion pigment 50 parts was applied on one side of the coated plate, and FL 100HQ polyester coating material was applied on the both side of the plate to give a test piece with good anticorrosion and adhesion.

- ST precoat metal plate excellent press workability prepn; Snowtex zirconyl ammonium carbonate polyacrylic acid glycidoxypropyltrimethoxysilane coating; polyester aluminum phosphate pigment **Shieldex** anticorrosion coating **galvanized** steel
- IT Polyesters, uses  
(anticorrosion layers, optionally topcoats; prepn. of precoat metal plates excellent in press workability)
- IT Epoxy resins, uses  
**Polyurethanes**, uses  
(anticorrosion layers; prepn. of precoat metal plates excellent in press workability)
- IT Coating materials  
(anticorrosive; prepn. of precoat metal plates excellent in press workability)
- IT Coupling agents  
(chem. treatment coating layer contg.; prepn. of precoat metal plates excellent in press workability)
- IT Transparent materials  
(coatings; prepn. of precoat metal plates excellent in press workability)
- IT **Galvanized** steel  
(electrogalvanized, substrates; prepn. of precoat metal plates excellent in press workability)
- IT Pigments, nonbiological  
(prepn. of precoat metal plates excellent in press workability)
- IT Metals, uses  
(substrates, precoated; prepn. of precoat metal plates excellent in press workability)
- IT **Galvanized** steel  
(substrates; prepn. of precoat metal plates excellent in press workability)
- IT Coating materials  
(topcoats; prepn. of precoat metal plates excellent in press workability)
- IT Coating materials  
(transparent; prepn. of precoat metal plates excellent in press workability)
- IT Polymers, uses  
(water-sol., chem. treatment coating layers; prepn. of precoat metal plates excellent in press workability)

- IT 7631-86-9D, Silica, calcium ion-exchanged, uses  
7779-90-0D, Zinc phosphate, derivs. 237762-16-2, Shieldex  
C 303 504396-01-4, NP 530  
(anticorrosion pigment, clear coating layer contg.; prepn. of  
precoat metal plates excellent in press workability)
- IT 17439-11-1 32535-84-5, Zirconyl ammonium carbonate  
(chem. treatment coating layer contg.; prepn. of precoat metal  
plates excellent in press workability)
- IT 9003-01-4, Polyacrylic acid  
(chem. treatment coating layer; prepn. of precoat metal plates  
excellent in press workability)
- IT 13939-25-8, Aluminum dihydrogen triphosphate  
(clear coating layer contg.; prepn. of precoat metal plates  
excellent in press workability)
- IT 7631-86-9, Snowtex N, uses  
(colloidal, chem. treatment coating layer contg.; prepn. of  
precoat metal plates excellent in press workability)
- IT 2530-83-8, .gamma.-Glycidoxypopyltrimethoxysilane  
(coupling agent, chem. treatment coating layer contg.; prepn. of  
precoat metal plates excellent in press workability)
- IT 7784-30-7D, Aluminum phosphate, derivs. 504387-15-9, K-G 105  
(pigment, clear coating layer contg.; prepn. of precoat metal  
plates excellent in press workability)
- IT 11149-84-1 12617-23-1  
(steel plated with; prepn. of precoat metal plates excellent in  
press workability)
- IT 12597-69-2D, Steel, nonferrous metal-plated, uses  
(substrate; prepn. of precoat metal plates excellent in press  
workability)
- IT 264189-52-8, FL 100HQ  
(topcoat; prepn. of precoat metal plates excellent in press  
workability)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

- (1) Nippon Steel Corp; JP 2000265282 A 2000 HCA
- (2) Shimakura, T; US 20010042491 A1 2001
- (3) Shimakura, T; JP 2001316845 A 2001 HCA

L32 ANSWER 6 OF 23 HCA COPYRIGHT 2005 ACS on STN

AN 138:289088 HCA

ED Entered STN: 01 May 2003

TI Precoated metal sheet with excellent press formability and producing  
process thereof

IN Ueda, Kouhei; Kanai, Hiroshi; Kimata, Yoshio

PA Nippon Steel Corporation, Japan

SO PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DT Patent

LA Japanese  
 IC ICM C23C022-78  
 ICS C23C022-48; C23C022-20; C23C022-82; C23C028-00; C09D005-06;  
 C09D201-00; B05D003-10; B05D007-14; B32B015-08; B32B027-18;  
 B32B027-36

CC 42-8 (Coatings, Inks, and Related Products)

Section cross-reference(s): 55, 56

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003027354	A1	20030403	WO 2002-JP9583	20020918
	W: CN, ID, KR, PH, SG, VN				
	JP 2003166079	A2	20030613	JP 2002-170098	20020611
PRAI	JP 2001-285378	A	20010919		
	JP 2002-170098	A	20020611		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2003027354	ICM	C23C022-78
	ICS	C23C022-48; C23C022-20; C23C022-82; C23C028-00; C09D005-06; C09D201-00; B05D003-10; B05D007-14; B32B015-08; B32B027-18; B32B027-36

AB A precoated metal sheet has on one or each side thereof a chromium-free chem.-treatment coating layer comprising as solid components at least either of tannin and tannic acid, a silane coupling agent, and finely particulate **silica** and a resin coating layer formed on the chem.-treatment coating layer and comprising 100 parts of a resin on a solid basis and 1-140 parts of an aluminum phosphate pigment. The chem.-treatment coating layer preferably further contains a polyester resin, and the resin coating layer preferably further contains an anticorrosive pigment. Aluminum dihydrogen tripolyphosphate is optimal as the aluminum phosphate pigment. Calcium ion-exchangeable **silica** is optimal as the anticorrosive pigment.

ST chromium free chem treatment coating precoated metal sheet; polyester anticorrosive pigment chem treatment metal; calcium ion exchangeable **silica** anticorrosive pigment; aluminum phosphate pigment coating metal chem treatment

IT Tannins  
 (Tannic acid AL, chem.-treatment coating layer; chromium-free anticorrosive coatings for precoated metal sheet with excellent press formability)

IT Coating materials

- (anticorrosive; chromium-free anticorrosive coatings for precoated metal sheet with excellent press formability)
- IT Epoxy resins, uses  
Polyesters, uses  
**Polyurethanes, uses**  
(chromium-free anticorrosive coatings for precoated metal sheet with excellent press formability)
- IT **Galvanized** steel  
(electrogalvanized, substrate; chromium-free anticorrosive coatings for precoated metal sheet with excellent press formability)
- IT Corrosion inhibitors  
(pigments, Ca ion-exchangeable **silica**; chromium-free anticorrosive coatings for precoated metal sheet with excellent press formability)
- IT Coupling agents  
(silane; chromium-free anticorrosive coatings for precoated metal sheet with excellent press formability)
- IT **Galvanized** steel  
(substrate; chromium-free anticorrosive coatings for precoated metal sheet with excellent press formability)
- IT Metals, miscellaneous  
(substrates; chromium-free anticorrosive coatings for precoated metal sheet with excellent press formability)
- IT **7631-86-9, Silica**, uses  
(Snowtex N, colloidal; chromium-free anticorrosive coatings for precoated metal sheet with excellent press formability)
- IT 237762-16-2, **Shieldex** C 303  
(anticorrosive pigment; chromium-free anticorrosive coatings for precoated metal sheet with excellent press formability)
- IT 13939-25-8, Aluminum dihydrogen triphosphate 503621-45-2, Finedic ES 650 504387-15-9, K-G 105 504396-01-4, NP 530 (pigment)  
(chromium-free anticorrosive coatings for precoated metal sheet with excellent press formability)
- IT 2530-83-8, .gamma.-Glycidoxypopyltrimethoxysilane  
(coupling agent; chromium-free anticorrosive coatings for precoated metal sheet with excellent press formability)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

- (1) Mitsui Mining & Smelting Co Ltd; JP 55-148773 A 1980 HCA
- (2) Mitsui Mining & Smelting Co Ltd; JP 59-116381 A 1984 HCA
- (3) Nippon Steel Corp; JP 200189868 A 2001
- (4) Showa Aluminum Corp; JP 57-19381 A 1982 HCA

L32 ANSWER 9 OF 23 HCA COPYRIGHT 2005 ACS on STN

AN 135:123911 HCA

ED Entered STN: 16 Aug 2001

TI Steel sheets coated with solvent-resistant organic resin composites

IN Yoshimi, Naoto; Ando, Satoshi; Miyoshi, Tatsuya; Matsuzaki, Akira;  
 Kubota, Takahiro; Yamashita, Masaaki  
 PA NKK Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 13 pp.  
 CODEN: JKXXAF  
 DT Patent

LA Japanese  
 IC ICM B32B015-08  
 ICS B05D007-14; B32B015-18; C23C022-00; C23C022-24; C23C028-00  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 55

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2001199003	A2	20010724	JP 2000-9154	20000118

PRAI JP 2000-9154 20000118

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 2001199003	ICM	B32B015-08
	ICS	B05D007-14; B32B015-18; C23C022-00; C23C022-24; C23C028-00

AB The sheets for household elec. app., automobiles, buildings, etc., consist of **galvanized** or Al-coated steel substrates and 0.1-5 .mu.m-thick org. composite films contg. (a) org. resins having soly. parameter (SP value) .ltoreq.10, (b) org. resins having SP value >10, and optionally (1) (c) 1-100 parts (based on 100 parts of a + b) of SiO<sub>2</sub>, Ca-exchanged SiO<sub>2</sub>, Ca silicates, polyphosphate salts, phosphate salts, phosphite salts, molybdate salts, phosphomolybdate salts, Ce oxide, Al<sub>2</sub>O<sub>3</sub>, phytic acid, its salts, phosphonic acid, its salts, and/or chromate salts; or (2) (c) and (d) 1-50 parts (based on 100 parts of a + b) of solid lubricants of polyolefin waxes having softening point .gtoreq.100.degree. and/or fluoropolymers. Thus, an electrogalvanized steel sheet was pretreated, chromated, coated with a compn. contg. Na-neutralized ethylene ionomer (SP value 8.8), epoxy resin (SP value 10.9), and Aerosil 300 (SiO<sub>2</sub>), and dried to give a coated sheet showing high corrosion resistance in salt spray test and solvent resistance to EtOH, MEK, C<sub>2</sub>HCl<sub>3</sub>, CH<sub>2</sub>Cl<sub>2</sub>, toluene, and hexane.

ST **galvanized** steel polymer coating solvent resistance; aluminum coated steel polymer coating solvent resistance; ethylene ionomer epoxy resin coating steel; silica corrosion inhibitor polymer coating steel; polyolefin wax lubricant composite coating steel; fluoropolymer lubricant composite coating steel

IT Polyphosphoric acids

(aluminum salts, corrosion inhibitors; steel sheets coated with solvent-resistant org. resin composites)

IT Corrosion inhibitors  
(coating component; steel sheets coated with solvent-resistant org. resin composites)

IT Fluoropolymers, uses  
(coating component; steel sheets coated with solvent-resistant org. resin composites)

IT Epoxy resins, uses  
Ionomers  
**Polyurethanes, uses**  
(coatings; steel sheets coated with solvent-resistant org. resin composites)

IT Chromates  
Molybdates  
Phosphates, uses  
Phosphites  
Polyphosphates  
(corrosion inhibitors; steel sheets coated with solvent-resistant org. resin composites)

IT **Galvanized steel**  
(electrogalvanized, substrate; steel sheets coated with solvent-resistant org. resin composites)

IT **Galvanized steel**  
(hot-dip, substrate; steel sheets coated with solvent-resistant org. resin composites)

IT Phosphates, uses  
(molybdophosphate, corrosion inhibitors; steel sheets coated with solvent-resistant org. resin composites)

IT Heteropoly acids  
(molybdophosphates, corrosion inhibitors; steel sheets coated with solvent-resistant org. resin composites)

IT Lubricants  
(solid, coating component; steel sheets coated with solvent-resistant org. resin composites)

IT Coating materials  
(solvent-resistant; steel sheets coated with solvent-resistant org. resin composites)

IT Polyolefins  
(waxes, coating component; steel sheets coated with solvent-resistant org. resin composites)

IT 9002-84-0, Tetrafluoroethylene polymer  
(coating component; steel sheets coated with solvent-resistant org. resin composites)

IT 74-85-1D, Ethylene, polymers, sodium salt 9002-85-1, Poly(vinylidene chloride) 9002-86-2, Poly(vinyl chloride) 9003-07-0, Polypropylene 9011-14-7, Poly(methyl methacrylate) 25014-41-9, Polyacrylonitrile



(coatings; steel sheets coated with solvent-resistant org. resin composites)

IT 7631-86-9, Snowtex O, uses

(colloidal, corrosion inhibitors; steel sheets coated with solvent-resistant org. resin composites)

IT 83-86-3, Phytic acid 1344-28-1, Aluminum oxide, uses 1344-95-2, Calcium silicate 7631-86-9D, Silica, calcium ion-exchanged, uses 7779-90-0, Zinc phosphate 10103-46-5, Calcium phosphate 11129-18-3, Cerium oxide 13598-36-2, Phosphonic acid 14332-59-3, Zinc phosphite 65526-82-1, **Magnesium** zinc phosphite 106145-21-5 130638-76-5 188652-91-7, Snowtex 20L 188653-13-6, Snowtex S 237762-16-2, **Shieldex** C 303

(corrosion inhibitors; steel sheets coated with solvent-resistant org. resin composites)

IT 7429-90-5, Aluminum, uses 52360-06-2 58465-32-0 115253-85-5

(steel primed with; steel sheets coated with solvent-resistant org. resin composites)

IT 12597-69-2, steel, uses

(steel sheets coated with solvent-resistant org. resin composites)

IT 9002-88-4

(wax, coating component; steel sheets coated with solvent-resistant org. resin composites)

L32 ANSWER 17 OF 23 HCA COPYRIGHT 2005 ACS on STN

AN 128:205992 HCA

ED Entered STN: 21 Apr 1998

TI Anticorrosive weldable preprimed steel plates with excellent powdering resistance and coatability

IN Yoshimi, Naoto; Urata, Kasuya; Yamashita, Masaaki; Haruda, Yasuhiko

PA Nippon Kokan Co., Ltd., Japan; Kansai Paint Co., Ltd.

SO Jpn. Kokai Tokkyo Koho, 30 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B05D007-14

ICS B05D007-24; B32B015-08; B32B027-18; B32B027-20; B32B027-24; C23C028-00

CC 42-10 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 10043677	A2	19980217	JP 1996-223036	19960806
PRAI	JP 1996-223036		19960806		
CLASS					

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 10043677	ICM ICS	B05D007-14 B05D007-24; B32B015-08; B32B027-18; B32B027-20; B32B027-24; C23C028-00
AB	Zinc-plated steel plates for automobile bodies are imparted a chromate layer then a 1.0-30 .mu.m-thick layer of compns. from (A) a base resin comprising 100 parts epoxy resins, modified epoxy resins, and/or polyhydroxy polyether resins and 5-80 parts isocyanate compds., (B) corrosion-preventing additives chosen from <b>silica</b> and water-insol. chromate salts at A/B = 99/1~50/50; (C) solid lubricants in an amt. of 0.1-30 part to 100 parts A + B and B/20 .ltoreq. C .ltoreq. B + 20; and (D) elec. conductive additives chosen from metals and alloys, elec. conductive carbon, iron phosphide, carbides, nitrides, and semiconductive oxides at 5 .ltoreq. [D/(A + B + C + D)] x 100 .ltoreq. 70 in vol.% based on the film-forming solids. A coating comprised Pheno Tohto YP-50 100, MIBK oxime-blocked IPDI 5, and dibutyltin dilaurate 0.2 part.	
ST	epoxy coating isocyanate hardener anticorrosive steel; automobile body anticorrosive steel plate; <b>galvanized</b> chromated anticorrosive steel plate	
IT	Fluoropolymers, uses (Teflon MP 1100; anticorrosive weldable preprimed steel plates with excellent powdering resistance and coatability)	
IT	Corrosion inhibitors Electric conductors Lubricants (anticorrosive weldable preprimed steel plates with excellent powdering resistance and coatability)	
IT	<b>Silica</b> gel, uses (anticorrosive weldable preprimed steel plates with excellent powdering resistance and coatability)	
IT	<b>Galvanized</b> steel (anticorrosive weldable preprimed steel plates with excellent powdering resistance and coatability)	
IT	Coating materials (anticorrosive; anticorrosive weldable preprimed steel plates with excellent powdering resistance and coatability)	
IT	Automobiles (bodies; anticorrosive weldable preprimed steel plates with excellent powdering resistance and coatability)	
IT	<b>Polyurethanes</b> , uses <b>Polyurethanes</b> , uses (epoxy; anticorrosive weldable preprimed steel plates with excellent powdering resistance and coatability)	
IT	Epoxy resins, uses Epoxy resins, uses ( <b>polyurethane</b> -; anticorrosive weldable preprimed steel	

plates with excellent powdering resistance and coatability)

IT 9002-84-0, PTFE  
(Teflon MP 1100; anticorrosive weldable preprimed steel plates with excellent powdering resistance and coatability)

IT 111-42-2DP, Diethanolamine, cationic epoxy resins, uses  
115-77-5DP, Pentaerythritol, cationic epoxy resins 141-43-5DP,  
Monoethanolamine, cationic epoxy resins, uses 4098-71-9DP, IPDI,  
cationic epoxy resins 85305-25-5DP, Dipropanolamine, cationic  
epoxy resins 124671-40-5DP, Takenate B-870N, cationic epoxy resins  
**133988-63-3P** 134291-65-9P 134498-50-3DP, Duranate TPA  
100, cationic epoxy resins 174514-92-2DP, Duranate MF-B80M,  
cationic epoxy resins **184015-78-9P** 184015-79-0P  
184015-80-3P  
(anticorrosive weldable preprimed steel plates with excellent  
powdering resistance and coatability)

IT 1317-33-5, Molykote Z, uses 7429-90-5, Aluminum, uses 7440-02-0,  
Nickel, uses 7440-66-6, Zinc, uses **7631-86-9**, Aerosil  
200, uses 7782-42-5, Graphite, uses 7789-06-2, Strontium  
chromate 9002-88-4, Luvax 115 10294-40-3, Barium chromate  
12070-08-5, Titanium carbide 12433-50-0, ZPC 12751-22-3, Iron  
phosphide 13765-19-0, Calcium chromate 25583-20-4, Titanium  
nitride 49663-84-5, ZTO 77466-62-7, **Shieldex**  
84135-65-9, Finesil T-32 109944-58-3, Aerosil R202 112153-70-5,  
Aerosil R805 139351-18-1, Aerosil R974 139920-08-4, Tin titanium  
oxide  
(anticorrosive weldable preprimed steel plates with excellent  
powdering resistance and coatability)

=> d his 134-

FILE 'HCAPLUS' ENTERED AT 17:47:26 ON 04 FEB 2005

L34 3170 S JARVIS ?/AU  
L35 22734 S HANSEN ?/AU  
L36 3 S L34 AND L35  
L37 89 S JARVIS L?/AU  
L38 1026 S HANSEN R?/AU  
L39 0 S L37 AND L38

(author search)

=> d his 140-

FILE 'WPIX, JAPIO' ENTERED AT 17:48:53 ON 04 FEB 2005

L40 10629 FILE WPIX

L41 5541 FILE JAPIO  
TOTAL FOR ALL FILES  
L42 16170 S GALVANIZ? OR GALVANIS?  
L43 489327 FILE WPIX  
L44 316228 FILE JAPIO  
TOTAL FOR ALL FILES  
L45 805555 S MASK? OR SCREEN? OR SHIELD OR SHIELDS OR SHIELDED OR SH  
L46 144111 FILE WPIX  
L47 47461 FILE JAPIO  
TOTAL FOR ALL FILES  
L48 191572 S POLYURETHAN## OR URETHAN##  
L49 14693 FILE WPIX  
L50 2837 FILE JAPIO  
TOTAL FOR ALL FILES  
L51 17530 S POLYUREA# OR (POLY OR POLYM? OR HOMOPOLYM? OR RESIN? OR  
L52 314 FILE WPIX  
L53 148 FILE JAPIO  
TOTAL FOR ALL FILES  
L54 462 S L42 AND L45  
L55 10 FILE WPIX  
L56 1 FILE JAPIO  
TOTAL FOR ALL FILES  
L57 11 S L54 AND L48  
L58 0 FILE WPIX  
L59 0 FILE JAPIO  
TOTAL FOR ALL FILES  
L60 0 S L54 AND L51

=> file wpix

FILE 'WPIX' ENTERED AT 17:54:47 ON 04 FEB 2005

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FILE LAST UPDATED: 2 FEB 2005 <20050202/UP>  
MOST RECENT DERWENT UPDATE: 200508 <200508/DW>  
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

=> d 155 1-10 ti

L55 ANSWER 1 OF 10 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
TI Bath model used for **galvanizing** processes in the  
automobile industry consists of a model ring made from dimensionally  
stable plastic having an over dimension with a theoretical contour.

L55 ANSWER 2 OF 10 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
TI Coating of wire, mesh or sheet using an aqueous dispersion of a UV

cross-linkable water soluble and/or water dispersible resin, a wax deforming additive, a photoinitiator and a corrosion inhibitor..

- L55 ANSWER 3 OF 10 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
TI Coating metal strip e.g. for vehicle, aircraft or household appliance part includes application of lacquer-like coat with aqueous polymer dispersion containing fine inorganic particles, lubricant and corrosion inhibitor.
- L55 ANSWER 4 OF 10 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
TI Protective equipment for protecting motorcyclist against injuries on crash barriers has vertical **screen**, cylinder placed around crash barrier support, and bridging pieces attaching **screen** to cylinder.
- L55 ANSWER 5 OF 10 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
TI Intermediate floor for cracking susceptible existing floor - has finely divided stone and mesh on asphaltic layer.
- L55 ANSWER 6 OF 10 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
TI Protective material for blast **screens** and barricade(s) - comprises core of reinforcing fibres with coating of abrasion-resistant material pref. **polyurethane**.
- L55 ANSWER 7 OF 10 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
TI Electrically conductive paint - comprising copper powder **galvanised** with tin, synthetic resin binder and solvent.
- L55 ANSWER 8 OF 10 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
TI Electrode roll with inert mesh coating - for electrolytic treatment of continuous metal strip.
- L55 ANSWER 9 OF 10 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
TI Coatings with engraving like coloured patterns.
- L55 ANSWER 10 OF 10 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
TI Composite cladding - with a foam (**polyurethane**) core and steel covers sealed with rubber and silicone seals.

=> d 155 2,3 max

- L55 ANSWER 2 OF 10 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
AN 2002-566471 [60] WPIX  
CR 2002-454412 [48]; 2002-507906 [54]; 2002-507907 [54]; 2002-507908 [54]; 2002-666757 [71]  
DNN N2002-448516 DNC C2002-160442  
TI Coating of wire, mesh or sheet using an aqueous dispersion of a UV

cross-linkable water soluble and/or water dispersible resin, a wax deforming additive, a photoinitiator and a corrosion inhibitor..

DC A18 A28 A82 E19 G02 M13 X12 X26

IN MAURUS, N

PA (CHEM-N) CHEMTEALL GMBH; (CHEM-N) CHEMETALL GMBH; (MAUR-I) MAURUS N

CYC 98

PI WO 2002024820 A2 20020328 (200260)\* GE 19 C09D000-00

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC  
MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ  
DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP  
KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ  
NO NZ PH PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG  
US UZ VN YU ZA ZW

AU 2002020564 A 20020402 (200267) C09D000-00

EP 1325090 A2 20030709 (200345) GE C09D005-08

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK  
NL PT RO SE SI TR

US 2004022951 A1 20040205 (200416) B05D003-02

ZA 2003002312 A 20040526 (200438) 36 C09D000-00

ADT WO 2002024820 A2 WO 2001-EP11034 20010925; AU 2002020564 A AU.  
2002-20564 20010925; EP 1325090 A2 EP 2001-985263 20010925, WO  
2001-EP11034 20010925; US 2004022951 A1 WO 2001-EP11034 20010925, US  
2003-380709 20030620; ZA 2003002312 A ZA 2003-2312 20030325

FDT AU 2002020564 A Based on WO 2002024820; EP 1325090 A2 Based on WO  
2002024820

PRAI DE 2001-10146446 20010920; DE 2000-10047686 20000925

IC ICM B05D003-02; C09D000-00; C09D005-08

AB WO 200224820 A UPAB: 20040616

NOVELTY - A process for the coating of metallic surfaces by use of aqueous dispersion comprising:

(a) water;

(b) a UV cross-linkable water soluble and/or water dispersible resin;

(c) a wax deforming additive;

(d) a photoinitiator; and

(e) a corrosion inhibitor whereby the coating, after drying and curing, has a layer thickness of upto 10 mu m.

DETAILED DESCRIPTION - A process for the coating of metallic surfaces by use of aqueous dispersion comprising:

(a) water;

(b) a UV cross-linkable water soluble and/or water dispersible resin;

(c) a wax deforming additive;

(d) a photoinitiator; and

(e) a corrosion inhibitor;

whereby the coating, after drying and curing, has a layer thickness of upto 10 mu m and shows no sign of corrosion greater

than 5% during a condensation water test (DIN50017 KFW) of greater than 240 h after deformation on a mandrel (3.2-38 mm diameter) during a mandrel bend test (DIN ISO6960) without cracking of the test surface.

USE - The coated substrate is useful as a wire, mesh, sheet, cladding, **screen**, body or body part, **aircraft part**, trailer, motor home or aircraft body, covering, case, lamp, light, furniture part, household equipment part, profile, molded part, heated element, tube, window, door or bicycle wheel or screw, nut, flange, spring or spectacles frame. The dispersion is useful as a primer (claimed).

ADVANTAGE - The coating may be applied rapidly and has improved flexibility.

Dwg.0/0

TECH WO 200224820 A2UPTX: 20020919

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Process: The dispersion comprises acrylate, epoxy, phenol, polyethylene, **polyurethane**, polyester and/or styrene.

Preferred Component: The corrosion inhibitor is an organometallic compound, optionally coated inorganic pigment, aluminum phosphate, zinc phosphate, zinc salts of aminocaboxylate, 5-nitro-isophthalic acid or cyanic acid, polymeric amine salts with fatty acids, metal salts of dodecyl naphthalene sulfonic acid, amine- and transition metal complexes of toluene propionic acid, silanes ,

2-mercaptobenzothiazoly succinic acid and/or their amine salts..

The deforming additive is a paraffin, polyethylene and/or polypropylene wax, preferably an oxidized wax having an m. pt. of 40-160 degreesC. The wetting agent is a polysiloxane. The dispersion contains a finely divided inorganic powder, preferably a carbonate, oxide, silicate or sulfate having a particle size of 5-300 nm, preferably aluminum oxide, barium sulfate, silicon dioxide, silicate, titanium dioxide, zinc oxide and/or zirconium dioxide.

Preferred Solvent: An organic solvent for the organic polymer comprises a water miscible and/or water soluble alcohol, glycol ether, N-methylpyrrolidone and/or water. The dispersion contains 0.1-5 wt.% organic solvent. The acid groups of the resin are stabilized with ammonium, morpholine, dimethylethanolamine, diethylethanolamine or triethanolamine and/or sodium hydroxide. The dispersion contains an electrically conductive compound, polymer or inorganic particle preferably having a particle size of less than 1  $\mu$ m.

Preferred Dispersion: The aqueous dispersion contains a biocide, defoaming agent and/or wetting agent. The metallic surface is aluminum, iron, copper, magnesium, nickel, titanium, zinc and/or their alloys.

The surface is freshly cleaned and/or their alloys. The surface is freshly cleaned and/or **galvanized** and preferably comprises at least 80% aluminum that is cleaned optionally pickled, anodized

or passivated. The metallic surface is cleaned and optionally pretreated preferably with a solution comprising fluoride, iron-cobalt and/or phosphate. The dispersion is applied by rolling, flooding or dipping such that the contact time is 0.001 s to 0.5 h and the temperature of the metal surface and dispersion during coating is 5-60 degreesC. The coated surface is dried at room temperature to 180 degreesC followed by irradiation with UV light, preferably at 180-500 nm to initiate polymerization. The dispersion is physically dried before or before and during UV-curing. The coating weight is 0.2-20 (1-5) g/cm<sup>2</sup> and the cured organic coating has a thickness of 0.1-10 mum and a pendulum hardness (Persos) of 30-550 s. The hardened coating is paintable. The coated metal part is a wire, band or band section having at least one other organic coating, preferably a lacquer, a topcoat, adhesive layer, adhesive support, film, foam and/or printed layer. The coated substrate is optionally cut, deformed, bonded to another part, welded, soldered, clamped, riveted or otherwise sealed.

ABEX WO 200224820 A2UPTX: 20020919

EXAMPLE - A coating composition comprising (wt/%):

- (1) 70.8 wt.% of an UV-curable polyurethane hybrid resin;
- (2) 8.0 wt.% of a polyurethane dispersion;
- (3) 6.0 wt.% of a styrene-acrylate copolymer;
- (4) 2.0 wt.% of a polyethylene wax emulsion;
- (5) 1.0 wt.% of an acid adduct of 4-oxo-4-p-tolylbutyrate;
- (6) 4-ethylmorpholine;
- (7) 0.9 wt.% hydroxy-cyclohexyl-phenyl ketone;
- (8) benzophenone;
- (9) 0.2 wt.% of a polyether modified polydimethylsiloxane; and
- (10) 11.2 wt.% deionized water (total binder content 30.58 wt.%, total water content 67 wt.%);

was applied to a galvanized steel substrate to a layer weight of 3.0 g/m<sup>2</sup>.

Corrosion tests (DIN50017 KFW) showed less than 1% surface corrosion after 240 hrs (less than 5% after 1200 h) and less than 5% (conical mandrel 3.2-38 mm) after 240 hrs .

KW [1] 129686-0-0-0 CL; 1775-0-0-0 CL; 135039-0-0-0 CL; 296662-0-0-0 CL; 865-0-0-0 CL; 0070-53401 CL; 259-0-0-0 CL; 1226-0-0-0 CL; 8687-0-0-0 CL; 195-0-0-0 CL; 131545-0-0-0 CL; 8625-0-0-0 CL; 265-0-0-0 CL; 1007-0-0-0 CL

FS CPI EPI

FA AB; DCN

MC CPI: A08-C01; A08-D01; A08-M10; A08-P01; A11-B05D; A12-B04; E05-L03C; E06-B02; E06-F01; E07-E03; E08-D02; E10-C02C2; E10-C02D2; E10-E04M1; E10-F02; E31-K05; E32-B; G02-A05; G02-A05E; M13-H05

EPI: X12-D03X; X26-D

DRN 0506-U; 0675-U; 0900-S; 0900-U; 0993-U; 0994-U; 1167-S; 1167-U; 1797-U



PLE UPA 20021108

L55 ANSWER 3 OF 10 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
AN 2002-507907 [54] WPIX  
CR 2002-454412 [48]; 2002-507906 [54]; 2002-507908 [54]; 2002-566471  
[60]; 2002-666757 [71]  
DNC C2002-144373  
TI Coating metal strip e.g. for vehicle, aircraft or household  
appliance part includes application of lacquer-like coat with  
aqueous polymer dispersion containing fine inorganic particles,  
lubricant and corrosion inhibitor.  
DC A18 A28 A82 E19 G02 M13  
IN BITTNER, K; DOMES, H; JUNG, C; KOLBERG, T; MAURUS, N; SCHINZEL, M;  
SHIMAKURA, T; WIETZORECK, H; SCHIMAKURA, T  
PA (CHEM-N) CHEMTEALL GMBH; (BITT-I) BITTNER K; (DOME-I) DOMES H;  
(JUNG-I) JUNG C; (KOLB-I) KOLBERG T; (MAUR-I) MAURUS N; (SCHI-I)  
SCHINZEL M; (SHIM-I) SHIMAKURA T; (WIET-I) WIETZORECK H  
CYC 95  
PI WO 2002031064 A1 20020418 (200254)\* GE 146 C09D005-00  
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC  
MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW  
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE  
DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG  
KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ  
PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN  
YU ZA ZW  
AU 2001095609 A 20020422 (200254) C09D005-00  
EP 1328590 A1 20030723 (200350) GE C09D005-00  
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK  
NL PT RO SE SI TR  
US 2004062873 A1 20040401 (200424) B05D001-36  
ADT WO 2002031064 A1 WO 2001-EP11737 20011010; AU 2001095609 A AU  
2001-95609 20011010; EP 1328590 A1 EP 2001-976296 20011010, WO  
2001-EP11737 20011010; US 2004062873 A1 WO 2001-EP11737 20011010, US  
2003-362403 20030909  
FDT AU 2001095609 A Based on WO 2002031064; EP 1328590 A1 Based on WO  
2002031064  
PRAI DE 2001-10127721 20010607; DE 2000-10050537 20001011;  
DE 2001-10110830 20010306; DE 2001-10119606 20010421  
IC ICM B05D001-36; C09D005-00  
ICS C09D005-08  
AB WO 200231064 A UPAB: 20040408.  
NOVELTY - Coating metal strip comprises applying  
corrosion-inhibiting coat(s) and lacquer-like coat(s) (I),  
before/after dividing it into sections, and forming, joining or/and  
applying more (I) or/and lacquer coat(s). (I) film is obtained by  
applying aqueous dispersion containing organic film-former(s)

containing polymer(s), inorganic particles and lubricant(s) or/and corrosion inhibitor(s), drying and optionally hardening.

DETAILED DESCRIPTION - Coating metal strip comprises applying corrosion-inhibiting coat(s) and lacquer-like coat(s) (I) containing polymer, before or after dividing it into sections, and forming, joining or/and applying more (I) or/and lacquer coat(s). (I) are provided by applying aqueous dispersion (II) containing organic film-forming agent(s) containing water-soluble or -dispersible polymer(s) with acid number 5-200, inorganic compound(s) in particles (III) of average diameter 0.005-0.3 micro m (scanning electron microscope) and lubricant(s) or/and corrosion inhibitor(s) to form a film containing (III), drying and optionally hardening, giving a 0.01-10 micro m thick film.

INDEPENDENT CLAIMS are also included for:

(a) process in which no corrosion-inhibiting coating is applied before (II);

(b) aqueous composition for pretreating metal surface before further coating or treatment, which comprises (II) and optionally organic solvent(s), silane(s) or/and siloxane(s), cross-linker(s), especially based on a basic compound, and/or chromium(VI) (Cr-VI) compound(s).

USE - The process is used for coating substrates e.g. wire, strip or part, in form of wire winding or braid, steel strip, sheet, cladding, **screen**, vehicle body (part), vehicle, trailer, caravan or aircraft part, cover, housing, lamp, light, ampoule part, piece or element of furniture, household appliance part, frame, profile, molding with complex geometry, conductive board, heater or fence element, push rod, part from or with tube(s) or/and profile(s), window, door or vehicle door frame or a small part, e.g. screw, nut, flange, spring or spectacle frame (all claimed). It is especially useful for coating aluminum (Al), iron (Fe), copper (Cu), magnesium (Mg), nickel (Ni), titanium (Ti), tin (Sn), zinc (Zn) or alloys containing these metals (all claimed). The products are used in vehicle construction, especially in mass production of cars, for making components, body parts or pre-assembled elements in the aircraft, aerospace or space travel industry; as sheet, cladding, body (part) or part of a vehicle, trailer, caravan or aircraft, as covers, profiles, moldings of complex geometry, push rods and parts of or with tube(s) or/and profile(s) (all claimed).

ADVANTAGE - Most existing processes for coating metals, especially metal strip, necessitate pretreatment based on chromium(VI) compounds and various additives before lacquering. The toxicological and ecological risks make this undesirable. Etching by inorganic acid used in some resin mixtures (dispersions) to improve contact greatly impairs protection against corrosion and darkens the surface of aluminum and its alloys. The present process can save at least one of the usual stages, especially a pretreatment stage and a lacquering stage (all claimed). It is suitable for fast coating, as

used for strip, and for large scale operation. It can be carried out with little or no chromium(VI) compounds and little or no inorganic and organic acid.

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TECH WO 200231064 A1UPTX: 20020823

TECHNOLOGY FOCUS - INORGANIC CHEMISTRY - Preferred Components:

Suitable components of corrosion-inhibiting coatings include those based on iron (Fe)-cobalt (Co), nickel (Ni)-Co, fluoride(s), complex fluoride(s), especially tetrafluoride or hexafluoride, phosphate, rare earth compounds, including those of lanthanum (La) and yttrium (Y), silicate, aluminum (Al), magnesium (Mg) and/or transition metal cations selected from Cr, Fe, hafnium (Hf), Co, manganese (Mn), molybdenum (Mo), nickel (Ni), titanium (Ti), tungsten (W) and zirconium (Zr) or/and nano-particles. The corrosion-inhibiting coating liquids contain 0.1-15, (preferably 0.5-8) g/l hexafluoride (F<sub>6</sub>; 0.1-1000 mg/l free F) or 0.1-1000 (preferably 0.5-200 especially 1-150) mg/l free F; and no cadmium (Cd), Cr, Co, Cu or/and Ni.

Preferred Particles: (III) are added as finely-divided powder, dispersion or suspension, e.g. of a carbonate, oxide, silicate or sulfate, especially as colloidal or/and amorphous particles. They are based on compound(s) of Al, barium (Ba), cerium (Ce), calcium (Ca), La, silicon (Si), Ti, Y, zinc (Zn) or/and Zr, especially Al oxide (Al<sub>2</sub>O<sub>3</sub>), Ba sulfate (BaSO<sub>4</sub>), Ce dioxide (CeO<sub>2</sub>), Si dioxide (SiO<sub>2</sub>), silicate, Ti oxide (TiO<sub>2</sub>), Y oxide (Y<sub>2</sub>O<sub>3</sub>), Zn oxide (ZnO) or/and Zr oxide (ZrO<sub>2</sub>).

Preferred Coating Compositions: The aqueous dispersion (II) contains 0.1-500 g/l of the particles (III) and 0 or 0.1-10 wt.% organic solvent and is adjusted to pH 0.5-12. It is (largely) free from Cr-VI compounds. Any of coating liquids may contain (i) particles (III) and also rare earth oxides, other rare earth compounds and Zn, with a diameter of 0.003-1 (preferably 0.005-0.2)  $\mu$ m (0.1-80, especially 1-50, more especially 2-30 g/l); (ii) corrosion inhibitors; (iii) compound(s) for slow neutralization of relatively acid mixtures e.g. based on (hydroxy)carbonate, especially foliated basic compounds, e.g. hydrotalcite; and (iv) fillers and/or pigments.

Preferred Cross-Linkers: Suitable cross-linkers are based on Ti, hafnium (Hf) or/and Zr compounds or/and carbonate or ammonium carbonate.

Preferred Solvents: The solvent preferably is water alone, without organic solvent.

TECHNOLOGY FOCUS - METALLURGY - Preferred Process: The strip or section is shaped after coating. Two or 3 corrosion-inhibiting coats are applied by dry and/or rinse processes. The first preferably consists of Al, Fe, Co, Cu, Mg, Ni, Ti, Sn, Zn or alloys of these, especially Zn applied by electrolytic or hot **galvanizing**.

(II) is applied by rollers, flooding, spreading, spraying or

dipping, optionally followed by squeegee treatment, at 5-50 degrees C, with the metal kept at 5-120 degrees C, and dried at a peak metal temperature in the 20-400 degrees C range. The coated strip is wound to a coil after cooling to 40-70 degrees C if necessary. After drying and cure, if necessary, the film is provided with lacquer, polymer, paint, adhesive or/and adhesive carrier coat(s). It may also be shaped, pressed, bonded, hot soldered, welded or/and joined by clinching or other techniques; cut; and/or bent. Each coating is applied in an amount of 0.0005-150, (preferably 0.0008-30, especially 0.001-10, more especially 1-6) g/m<sup>2</sup>; and the (partly) cured films may be given a thin (0.1-10  $\mu$ m) coating of material containing an organic polymer or a reaction, shop or wash primer. The metal may be rinsed or/and passivated after applying any of these coatings.

Preferred Properties: The dried and optionally cured film has a Koenig pendulum hardness of 30-190 seconds (to DIN 53157). When bent over a conical mandrel (in the mandrel test described in DIN ISO 6860 for a 3.2-38 mm diameter mandrel but without scribing the surface), it is so flexible that no cracks longer than 2 mm can be detected on wetting with copper sulfate by the color change caused by deposition of copper on the exposed metal surface.

#### TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Corrosion

Inhibiting Coatings: Suitable components include organic hydroxyl compounds, phosphonates and silane/siloxane.

Preferred Composition: (II) may also contain organic solvent(s), silane(s) or/and siloxane(s), cross-linking agent(s) based on basic compounds or/and Cr-VI compound(s). The organic film former is in the form of a solution, dispersion, emulsion, microemulsion or/and suspension. Any of the coating liquids may contain silane and/or siloxane (0.1-50, preferably 1-30, 51-1300 or 0.1-1600, preferably 100-1500 g/l) and other components used in (II).

Preferred Corrosion Inhibitors: Suitable corrosion inhibitors are based on amine(s), preferably alkanolamine(s), conductive polymer(s) or/and thiol(s), e.g. Al, Mn, Ti or/and Zr compounds of olefinically unsaturated carboxylic acids and ammonium salts, such as chelated lactic acid titanate, triethanolamine titanate or zirconate, Zr 4-methyl-gamma-oxo-benzene-butanoate, Al-Zr carboxylate, alkoxypropenolatotitanate or -zirconate, Ti or/and Zr acetate and Ti-Zr ammonium carbonate; phosphonic acids, e.g. 1-phosphonic acid-12-mercaptododecane.

Preferred Silanes: In (II), the silane, which is (partly) hydrolyzed in (II), is an aminosilane, epoxysilane, vinylsilane or/and corresponding siloxane(s) and preferably is used in concentration of 0.1-50 g/l.

Preferred Solvents: Suitable solvents for the organic polymer are water-miscible or/and water-soluble alcohols, glycol ethers, N-methylpyrrolidone or/and water, including mixtures of long-chain

alcohols, e.g. propylene glycol, ester-alcohols, glycol ethers or/and butandiol with water.

Preferred Additives: (I) may contain photoinitiator(s) for cure with actinic radiation or be cured partly in this way and partly by drying and film formation or thermal cure; and/or biocide, antifoam or/and wetting agent.

TECHNOLOGY FOCUS - POLYMERS - Preferred Corrosion Inhibiting Coatings: Suitable components include polymers, preferably water-soluble or -dispersible polymers, copolymer, block copolymers, cross polymers, monomers, oligomers, derivatives, mixtures or/and mixed polymers.

Preferred Film Formers: The organic film former is a synthetic resin, especially based on a derivative, polymer, copolymer, mixture or/and mixed polymer, preferably of molecular weight not less than 1000, (especially not less than 5000, more especially 20000-200000) and pH 1-12 in aqueous medium without additives. The film formers are based on acrylate, **polyurethane**, epoxide, phenolic or/and (a, b) ethylene, polyester, styrene or/and (a) silicone-polyester, urea-formaldehyde, (b) styrene-butadiene or (c) polyethylene-imine, polyvinyl alcohol, polyvinyl phenol, polyvinylpyrrolidone, polyaspartic acid or/and especially copolymers with a vinyl compound containing phosphorus (P). They preferably contain carboxyl groups.

Preferred Coating Compositions: The acid groups of the resins are stabilized with ammonia, amines, e.g. morpholine, dimethylethanolamine, diethylethanolamine or triethanolamine or/and alkali metal compounds, e.g. sodium hydroxide. (II) contains 0.1-1000, preferably 2-600 g/l film former. It is free from inorganic acids or/and organic carboxylic acids. Any of the coating compositions may contain these film formers, preferably based on pyrrolidones, in amounts of 0.1-500, (preferably 0.5-30 or 80-250) g/l. The monomer content of these liquids is not less than 5, (preferably not less than 20, especially not less than 40) wt.%. Preferred Additives: (II) may contain lubricants selected from paraffin, polyethylene and polypropylene waxes, especially oxidized waxes, with a melting point in the 40-160 degrees C range; a conductive polymer, e.g. for slow neutralization of acid mixtures.

Preferred Coatings: After drying and optionally curing (I), the metal may be coated with polymers. e.g. polyvinyl chloride (PVC).

ABEX WO 200231064 A1UPTX: 20020823

EXAMPLE - Sheets obtained from cold rolled steel strip galvanized with 55% aluminum-zinc (Galvalume RTM) were degreased, rinsed with water and dried by heating. The sheets were treated with a definite amount of an aqueous bath solution, using a roll coater, to give a wet film thickness of about 10 ml/m<sup>2</sup>. Then drying, film formation and cure were carried out at 90 degrees C peak metal temperature. Baths (A, B) and a control (C) contained (A) 4.40, (B) 0, (C) 2.22 parts weight styrene-acrylate, (A) 0, (B) 4.40, (C)

acrylic-polyester-polyurethane mixed polymer (3.09 parts weight) and (A, B) 2.60, (C) ethylene-acrylic mixed polymer (3.09 parts weight) (melting point 70-90 degrees C). Only (A, B) contained colloidal silica (1.40 parts weight) (10-20 nm), All baths contained water (100 parts weight), oxidized polyethylene (0.50 part weight), polysiloxane (0.10 part weight), antifoam (0.10 part weight), long-chain alcohol (0.40 part weight), ammonium-zirconium carbonate (0.40 part weight) and TPA amine complex (0.10 part weight) and were adjusted to pH 8.2 with ammonia solution. In the salt spray test to ASTM B117-73, after 480 hours, the surface corrosion was (A, B) 0, (C) 100% and edge corrosion (A, B) 12 mm, (C) complete corrosion. In the condensed water, constant climate test to DIN 50017, after over 1680 hours, the surface corrosion was (A, B, C) 0%. In the stack test, after 28 days, the surface corrosion was (A, B) 0, (C) 30% and edge corrosion (A, B) 2 mm, (C) complete corrosion.

KW [1] 131258-0-0-0 CL; 92-0-0-0 CL; 88364-0-0-0 CL; 129360-0-0-0 CL; 107016-0-0-0 CL; 686-0-0-0 CL; 5404-0-0-0 CL; 866-0-0-0 CL; 157006-0-0-0 CL; 87087-0-0-0 CL; 131374-0-0-0 CL; 89847-0-0-0 CL; 134277-0-0-0 CL; 133966-0-0-0 CL; 134645-0-0-0 CL; 133871-0-0-0 CL; 202609-0-0-0 CL; 130645-0-0-0 CL; 130303-0-0-0 CL; 244192-0-0-0 CL; 131071-0-0-0 CL; 130522-0-0-0 CL; 135238-0-0-0 CL; 131924-0-0-0 CL; 134987-0-0-0 CL; 0064-95001 CL; 551727-0-0-0 CL; 130709-0-0-0 CL; 551729-0-0-0 CL; 130517-0-0-0 CL; 358913-0-0-0 CL; 0064-95002 CL; 0064-95003 CL; 0064-95004 CL

FS CPI

FA AB; DCN

MC CPI: A11-B05D; A12-B04; E05-B; E05-E; E05-G; E05-M; E10-B03A2; E10-B03B2; E10-E03; E10-E04; E31-K03; E31-P03; E34; E35; G02-A05E; M13-H05

DRN 0247-U; 1506-U; 1520-U; 1544-U; 1694-U; 1739-U; 1966-U

PLE UPA 20021108

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L56 ANSWER 1 OF 1 JAPIO (C) 2005 JPO on STN

ACCESSION NUMBER: 1997-270593 JAPIO

TITLE: INDOOR ELECTROMAGNETIC WAVE SHIELDING

INVENTOR: STEEL PLATE  
 WATANABE KEIICHI; MORI KOJI; KOSHIISHI KENJI  
 PATENT ASSIGNEE(S): NISSHIN STEEL CO LTD  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 09270593	A	19971014	Heisei	H05K009-00

## APPLICATION INFORMATION

STN FORMAT: JP 1996-104153 19960329  
 ORIGINAL: JP08104153 Heisei  
 PRIORITY APPLN. INFO.: JP 1996-104153 19960329  
 SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined  
 Applications, Vol. 1997

AN 1997-270593 JAPIO

AB PROBLEM TO BE SOLVED: To simplify the work for manufacturing an indoor electromagnetic wave **shielding** steel plate and to prevent a metal foil from being oxidized or corroded by a method wherein a **shielding** material is formed by laminating a doubling sheet, which is formed by laminating a resin film on the metal foil having an electromagnetic wave **shielding** efficiency, on a steel plate via a bonding agent in such a way that the side of the metal foil is provided on the side of the steel plate.

SOLUTION: A two-pack **polyurethane** bonding agent is applied on a hot dip **galvanized** steel plate (plate thickness: 0.5mm and the coating amount of zinc: 45g/m<sup>2</sup> in one side) performed a coating type chromate treatment in such a way that the bonding agent is formed in 5μm in dry thickness. After the steel plate is stoved and dried so that the highest steel plate temperature reaches 200deg;C, and doubling sheet, which is formed by laminating a resin film (25μm) on a copper foil (35μm) via an epoxy bonding agent layer (3μm), is fed to the steel plate in such a way that it is positioned on the side of the steel plate to laminate silicon rubber on the doubling sheet by a laminating roll. Thereby, the workability for manufacturing an indoor electromagnetic wave **shielding** steel plate is made to enhance and it can be eliminated that the metal foil is oxidized or corroded.

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IC ICM H05K009-00  
 ICS B32B007-02; E04B001-92

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	27	(galvanization or galvaniz\$3 or electrodeposition or electro adj deposition) and mask\$3 with (polyurethane or polyurea)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 07:02
L2	8	(electroless adj plating) and mask\$3 with (polyurethane or polyurea) not 1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 07:16
L3	122	mask\$3 and galvaniz\$5	USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 07:43
L4	7	3 and (polyurea or polyurethane)	USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 07:19
L5	51	mask\$3 and galvaniz\$6	EPO; JPO	OR	ON	2005/02/04 07:18
L6	0	5 and (polyurea or polyurethane)	USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 07:41
L7	10	5 and (plastic or polymer\$2 or resin\$3)	USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 07:41
L8	0	5 and (polyurea or polyurethane)	EPO; JPO	OR	ON	2005/02/04 07:41
L9	10	5 and (plastic or polymer\$2 or resin\$3)	EPO; JPO	OR	ON	2005/02/04 08:14
L10	7	"118"/dig.11.ccls.	EPO; JPO	OR	ON	2005/02/04 07:43
L11	0	"118"/dig.12.ccls.	EPO; JPO	OR	ON	2005/02/04 07:43
L12	80	"118"/dig.12.ccls.	USPAT; USOCR	OR	ON	2005/02/04 07:43
L13	592	"118"/dig.11.ccls.	USPAT; USOCR	OR	ON	2005/02/04 07:43
L14	665	12 or 13	USPAT; USOCR	OR	ON	2005/02/04 07:43
L15	2	14 and mask\$3 and galvaniz\$5	USPAT; USOCR	OR	ON	2005/02/04 07:44
L16	29	427/230,234,239.ccls. and (plastic or polymer\$2 or resin\$3 or polyurea or polyurethane) same mask\$3	US-PGPUB; USPAT; USOCR	OR	ON	2005/02/04 08:37
L17	3	427/433.ccls. and (plastic or polymer\$2 or resin\$3 or polyurea or polyurethane) same mask\$3	US-PGPUB; USPAT; USOCR	OR	ON	2005/02/04 08:37



Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	27	(galvanization or galvaniz\$3 or electrodeposition or electro adj deposition) and mask\$3 with (polyurethane or polyurea)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 09:34
L2	8	(electroless adj plating) and mask\$3 with (polyurethane or polyurea) not-1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 09:38
L3	122	mask\$3 and galvaniz\$5	USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 07:43
L4	7	3 and (polyurea or polyurethane)	USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 07:19
L5	51	mask\$3 and galvaniz\$6	EPO; JPO	OR	ON	2005/02/04 07:18
L6	0	5 and (polyurea or polyurethane)	USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 07:41
L7	10	5 and (plastic or polymer\$2 or resin\$3)	USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 07:41
L8	0	5 and (polyurea or polyurethane)	EPO; JPO	OR	ON	2005/02/04 07:41
L9	10	5 and (plastic or polymer\$2 or resin\$3)	EPO; JPO	OR	ON	2005/02/04 08:14
L10	7	"118"/dig.11.ccls.	EPO; JPO	OR	ON	2005/02/04 07:43
L11	0	"118"/dig.12.ccls.	EPO; JPO	OR	ON	2005/02/04 07:43
L12	80	"118"/dig.12.ccls.	USPAT; USOCR	OR	ON	2005/02/04 07:43
L13	592	"118"/dig.11.ccls.	USPAT; USOCR	OR	ON	2005/02/04 07:43
L14	665	12 or 13	USPAT; USOCR	OR	ON	2005/02/04 07:43
L15	2	14 and mask\$3 and galvaniz\$5	USPAT; USOCR	OR	ON	2005/02/04 07:44
L16	29	427/230,234,239.ccls. and (plastic or polymer\$2 or resin\$3 or polyurea or polyurethane) same mask\$3	US-PGPUB; USPAT; USOCR	OR	ON	2005/02/04 08:37
L17	3	427/433.ccls. and (plastic or polymer\$2 or resin\$3 or polyurea or polyurethane) same mask\$3	US-PGPUB; USPAT; USOCR	OR	ON	2005/02/04 09:32

L18	930	(electroless adj plating) and mask\$3 and (tube or pipe )	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 09:32
L19	290	18 and (plastic or polymer\$2 or resin\$3 or polyurea or polyurethane) same mask\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 09:33
L20	8	18 and ( polyurea or polyurethane) same mask\$3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 09:33
L21	55	(galvanization or galvaniz\$3 or electrodeposition or electro adj deposition) and 19	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 09:34
L22	3	427/282.ccls. and mask\$3 with (polyurethane or polyurea) and (tube or pipe)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2005/02/04 09:39